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IMMUNE CELLS IN THE ENDOMETRIUM DURING MID-LUTEAL PHASE.

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OBJECTIVE: To evaluate the associations among immune cells (T-cells, B-cells, Macrophages and NK cells) in the human endometrium during mid-luteal phase of the menstrual cycle.

MATERIALS AND METHODS: Endometrial biopsies were obtained from 116 women during the mid-luteal phase (7 days after LH surge) of the natural cycles. The presence of CD3-positive (T-cells), CD4-positive (T-helpers), CD8-positive (T-killers), CD14-positive (Macrophages), CD68-positive (Macrophages), CD56-positive (NK cells) and CD79 α -positive (B-cells) in the endometrial samples was confirmed by immunohistochemical staining using CD3 (BRB063, Zytomed Systems), CD4 (IS649, Dako), CD8 (1-CD040-02, Quartett), CD14 (E-AB-71017, Elabscience), CD68 (IS613, Dako), CD56 (A00121-0007, ScyTek), CD79 α (IS621, Dako) antibodies, respectively. The percentage of positively stained endometrial stromal cells was evaluated by Image-J software (NIH, Maryland, USA) in multiple endometrial sections. Statistical analysis was performed by Pearson's correlation test using SPSS v.21.

RESULTS: The mean percentage of the CD3-positive (T-cells), CD4-positive (T-helpers), CD8-positive (T-killers), CD14-positive (Macrophages), CD68-positive (Macrophages), CD56-positive (NK cells), and CD79 α -positive cells (B-cells) were $1.13 \pm 0.60\%$, $0.37 \pm 0.09\%$, $0.74 \pm 0.39\%$, $1.31 \pm 0.57\%$, $1.02 \pm 0.02\%$, $0.88 \pm 0.84\%$ and $0.19 \pm 0.06\%$, respectively.

A significant positive correlation was observed between each pair of the analysed immune cells ($p < 0.001$). The strongest relation was observed between the CD68-positive macrophages and CD8-positive T killer cells ($R = 0.961$) and between CD56-positive (NK cells) and CD14-positive macrophages ($R = 0.964$).

CONCLUSIONS: In conclusion we observe presence of CD3-positive, CD4-positive (T-helpers), CD8-positive (T-killers), CD14-positive (Macrophages), CD68-positive (Macrophages), CD56-positive (NK cells) and CD79 α -positive cells (B-cells) in the endometrium during the mid-luteal phase of the menstrual cycle. Furthermore significant correlations between the present immune cells were found.

IMPACT STATEMENT: It is known that the immune environment in the endometrium is crucial during the embryo implantation period. This study provides information on the immune content in the endometrium during the mid-luteal phase. Knowledge on the relations among the immune cells in the endometrium could navigate the future research on the immunological preparation of the endometrium before the embryo implantation.

O-270 12:00 PM Wednesday, October 20, 2021

THE EFFECTS OF SEXUAL FREQUENCY AND IMMUNE BOOSTING MINERAL INTAKE ON IMMUNE STATUS IN COVID-19 SUSCEPTIBLE INDIVIDUALS.

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OBJECTIVE: In this study, the aim is to identify the effect of having sex and sexual activity preference on the ability of the immune system to fight infection from the COVID-19 virus.

MATERIALS AND METHODS: A descriptive, survey-based, cross-sectional study was conducted among 16,000 participants aged ≥ 18 years of age from 33 different countries. The survey was conducted as an online survey distributed for the general population utilizing Facebook and Twitter over the course of four months. The inclusion criteria for this study included an age ≥ 18 years old with a positive COVID-19 test. Participants were assigned to one of two groups. Group 1 agreed to have had sexual intercourse > 3 times per month were Group 2 participants reported having sexual intercourse < 3 times per month.

RESULTS: The majority of the people after being in contact with the patients in group 1 (Who have sex > 3 times a month) (76.6%) were not infected, and even the infected people were in mild cases in comparison with group 2 (Who have sex < 3 times a month) who have approximately half to half for infected to non-infected people (40.43%).

CONCLUSIONS: The findings in this study suggest a protective role for the sex in COVID-19 infection despite the age of the person or sexual behavior. As one's sexual activity increased, the immunity status becomes more competent to deal with pathogens, and this explains lower incidence of disease among those who have sex > 3 times a month in comparison with those who have sex < 3 times a month.

IMPACT STATEMENT: The findings in this study are suggestive of a protective role for the sex in COVID-19 infection despite the way of having sex and the age of the person. As sexual activity increases, the immunity status becomes more competent to deal with pathogens. This explains the lower incidence of disease among those who have sex > 3 times a month in comparison with those who have sex < 3 times a month. We suggest a deeper look into this topic in the hopes people are able to boost their immune systems in a healthy natural way.

REPRODUCTIVE SURGERY AND PROCEDURES

O-271 10:45 AM Wednesday, October 20, 2021

IMMEDIATE START IVF STIMULATION FOLLOWING POLYPECTOMY DOES NOT IMPACT PREGNANCY OUTCOMES IN LARGE MULTICENTER COHORT OF OVER SIXTEEN HUNDRED EMBRYO TRANSFERS.

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OBJECTIVE: To determine if delayed IVF stimulation start after hysteroscopic polypectomy (HP) has superior pregnancy outcomes when compared to an immediate start in both fresh and frozen embryo transfers (FET).

MATERIALS AND METHODS: We analyzed IVF cycles following HP from 2017 - 2021 at a large multicenter private practice. Cohorts of fresh and frozen embryo transfers performed after HP were identified using standard CBT codes.

These cohorts were divided into 3 groups consistent with prior studies according to time to embryo transfer at intervals of: within 28 days, 28-90 days, and 28-180 days for both fresh and FET. The interval "within 28 days" represented "immediate IVF stimulation start." All other time intervals were compared to the "immediate start" group. To identify significant differences between groups, chi square analysis and linear regression were utilized to compare between groups with p values < 0.05 for significance. Lastly, a continuous analysis of the number of days from HP to ET compared with live birth was made utilizing GEE analysis for all transfers.

RESULTS: A total of 1619 cases were identified as undergoing frozen or fresh embryo transfers following HP, including 488 fresh and 1131 FET.

Controlling for age, BMI, and PGT for aggregate FETs and fresh transfers, there was no difference in live birth when comparing the number of days from HP to ET ($p = 0.984$).

Specifically, the time to embryo transfer was not associated with negative pregnancy outcomes from either fresh or FET, when comparing intervals of less than 28d, 28-90d and 28-180 days post HP; fresh ($p = 0.14$) or FET ($p = 0.31$). Pregnancy outcomes included not pregnant (NP), spontaneous abortion (SAB), ongoing pregnancy (ONG), stillbirth (SB), and live birth (LB).

CONCLUSIONS: Delaying either fresh or frozen embryo transfer following HP does not significantly improve pregnancy outcomes.

IMPACT STATEMENT: This study is the first of this size to demonstrate that short interval to fresh or frozen embryo transfer following polypectomy does not negatively impact pregnancy outcomes and is therefore an acceptable option to offer patients.